Department of LABOR AND INDUSTRIES

ERGONOMICS
Worker Protection

Ergonomics demonstration project: Commercial construction

Need

Commercial-building contractors in Washington have had a high rate of Work-Related Musculoskeletal Disorders (WMSDs). For instance, from 1991 to 1998, the average annual number of new workers' compensation claims for injuries to hands, wrists, elbows, shoulders and backs in concrete work was 285. These injuries in concrete forming, pouring and finishing result in significant financial and personal costs to workers and employers. Working with concrete is physically demanding and these jobs make up a large portion of the Lydig Construction's workforce.

Lydig Construction is a large general contractor for commercial buildings doing work throughout the Pacific Northwest, as well as other sites throughout the country. In early 2001, the Spokane office of the Department of Labor and Industries contacted representatives of Lydig Construction about a joint project to reduce WMSDs.

Goals

Goals of this demonstration project are to:

- Demonstrate that the employer can identify risk factors and hazards covered by the ergonomics rule.
- Identify ways to reduce or eliminate these hazards in compliance with the rule.
- Evaluate tasks involved with concrete forming, pouring and finishing.
- Share information from the project with the industry through educational materials and workshops.

Project design

The project team included Spokane L&I staff and representatives from Lydig Construction. The team was formed in May 2001. Team members decided at the outset to focus solely on developing examples that could be used to meet the requirements of the proposed rule.

Lydig will evaluate tasks involved with concrete forming, pouring and finishing. The company will work with L&I to develop best/acceptable practices for hand screeding vs. power screeding tasks. It will also look at different tools available for hand troweling. Another issue that will be addressed will be reducing the spacing between the screeding bulkheads. Lydig also will provide information to L&I on the utility of using administrative controls such as job rotation, job enlargement and realignment of tasks.

The company will assess the value of using engineering controls such as power screeds, power trowels and anti-vibration trowels while finishing concrete.

In addition, Lydig Construction will prepare a spreadsheet that documents activities and the amount of time spent working on this project. Lydig also will prepare a quarterly progress report to be submitted to L&I's Spokane Region 6 Consultation staff. Finally, the company will work with various manufacturers of concrete-finishing tools with the goal of exploring new technology as it becomes available.

Timetable

January 2001.....Videotaped jobs being done at University High School in Spokane
February 2001 .....Hold initial meeting with Lydig Construction and the Associated General Contractors
May 2001.....Outlined demonstration projects and set goals of project. Videotaped work at Spokane International Airport Garage project
June 2001 .....Lydig Construction defined its processes and goals of the project. More videotaping of work at Spokane International Airport Garage project.
August 2001.....Additional videotaping of finish work at University High School
December 2001 .....Publish quarterly report for Region 6 L&I staff
June 2002.....Complete demonstration project and compile information

Results

The project will result in products the entire industry can use to help implement the ergonomics rule:

- Audiovisual materials, including videotapes, pictures of the different aspects of concrete forming, pouring, and finishing, and the WMSD hazards associated with each type of work being done.
- A list of effective engineering and administrative controls which will be applicable in other concrete-finishing applications throughout the state. These will include, but not be limited to, tools such as power screeds, power trowels and anti-vibration trowels.
- Lydig Construction, by opening its worksites to L&I for videotaping, employee interviews and picture taking, will be providing L&I with training materials for upcoming construction workshops.
- Lydig Construction will assess the utility of various engineering and administrative controls.